WHAT IS CLAIMED IS:

1. An electrode comprising: (i) a substrate having at least one surface and comprising a conductive material; and (ii) a plurality of magnetizable particles on said surface,

wherein said magnetizable particles have been exposed to a magnetic field of sufficient strength for a sufficient time to align the magnetic moments of a portion of atoms within a majority of said particles and wherein said alignment is maintained upon removal of said magnetic field, and

further wherein said portion of atoms aligned within each of said particles is sufficient to alter the rate of a chemical reaction involving said particle or occurring within the vicinity of said particle and/or the distribution of products resulting from a chemical reaction involving said particle or occurring within the vicinity of said particle.

2. The electrode of claim 1, wherein each of said magnetizable particles comprises a permanent magnetic material.

3. The electrode of claim 1, wherein each of said magnetizable particles comprises a paramagnetic material.

4. The electrode of claim 1, wherein each of said magnetizable particles comprises a superparamagnetic material.

5. The electrode of claim 1, wherein each of said magnetizable particles comprises comprises a ferromagnetic material.

6. The electrode of claim 1, wherein each of said magnetizable particles comprises a ferrimagnetic material.

7. The electrode of claim 1, wherein each of said magnetizable particles comprises a superconducting material.

8. The electrode of claim 1, wherein each of said magnetizable particles comprises an anti-ferromagnetic material.

9. The electrode of claim 1, wherein said chemical reaction involves transfer of at least one subatomic particle.

10. The electrode of claim 1, wherein each of said magnetizable particles has a diameter of about 0.1 microns to about 10 microns.

11. The electrode of claim 1, wherein each of said magnetizable particles comprises at least one material selected from the group consisting of samarium cobalt, neodynium-iron-boron, iron and iron oxide, nickel, cobalt, zinc, misch metal, and ceramic magnets comprising barium ferrite and/or strontium ferrite.

12. The electrode of claim 1, wherein each of said magnetizable particles comprises at least one material selected from the group consisting of nickel hydroxide, nickel oxy hydroxide, zinc hydroxide, cobalt oxide, manganese oxide, lithium carbonate, and lithium hydroxide.

13. The electrode of claim 1, wherein each of said magnetizable particles has at least one coating layer on at least a portion of the surface thereof.

14. The electrode of claim 13, wherein said at least one coating layer comprises at least one of substituted polystyrene, unsubstituted polystyrene, and silane.

15. The electrode of claim 1, wherein said magentizable particle has a plurality of coating layers on at least a portion of the surface thereof.

16. The electrode of claim 1, further comprising an effective amount of at least one binder.

17. The electrode of claim 1, further comprising an effective amount of at least on gelling agent.

18. The electrode of claim 1, wherein each of said magnetizable particles comprises at least one ferromagnetic material selected from the group consisting of iron, nickel, cobalt, dysprosium, and gadolinium.

19. The electrode of claim 1, further comprising at least one permanent magnetic particle, wherein said permanent magnetic particle has a magnetic field of sufficient strength to maintain the alignment of the magnetic moments of a portion of atoms within said magnetizable particle.

20. The electrode of claim 19, wherein said permanent magnetic particle comprises at least one material selected from the group consisting of samarium cobalt, neodynium-iron-boron, iron and iron oxide, cobalt, misch metal, and ceramic magnets comprising barium ferrite and/or strontium ferrite.

21. An electrode comprising a plurality of magnetizable particles and a plurality of permanent magnetic particles, wherein said permanent magnetic particles have a magnetic field of sufficient strength to align the magnetic moments of a portion of atoms within said magentizable particles sufficient to alter the rate of and/or distribution of products resulting from a chemical reaction involving one or more of said magnetizable particles and/or said permanent magnetic particles or occurring within the vicinity of one or more of said magnetizable particles and/or said permanent magnetic particles.

22. An electrode comprising a plurality of magnetizable particles, wherein said magnetizable particles have been exposed to a magnetic field of sufficient strength to align the magnetic moments of a portion of atoms within said magentizable particles sufficient to alter the distribution of products resulting from a chemical reaction involving one or more of said magnetizable particles or occurring within the vicinity of one or more of said magnetizable particles.

23. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises a paramagnetic material.

24. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises a superparamagnetic material.

25. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises a ferromagnetic material.

26. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises a ferrimagnetic material.

27. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises a superconducting material.

28. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises an anti-ferromagnetic material.

29. The electrode of claim 21 or 22, wherein said chemical reaction involves the flux of a solute through a composite containing a plurality of said magnetizable particles.

30. The electrode of claim 21 or 22, wherein said chemical reaction involves mass transport.

31. The electrode of claim 21 or 22, wherein said chemical reaction involves transfer of at least one subatomic particle.

32. The electrode of claim 21 or 22, wherein each of said magnetizable particles has a diameter of about 0.1 microns to about 10 microns.

33. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises at least one material selected from the group consisting of samarium cobalt, neodynium-iron-boron, iron and iron oxide, nickel, cobalt, zinc, misch metal, and ceramic magnets comprising barium ferrite and/or strontium ferrite.

34. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises at least one material selected from the group consisting of nickel hydroxide, nickel

oxy hydroxide, zinc hydroxide, cobalt oxide, manganese oxide, lithium carbonate, and lithium hydroxide.

35. The electrode of claim 21 or 22, wherein each of said magnetizable particles has at least one coating layer on at least a portion of the surface thereof.

36. The electrode of claim 35, wherein said at least one coating layer comprises at least one of substituted polystyrene, unsubstituted polystyrene, and silane.

37. The electrode of claim 21 or 22, wherein each of said magentizable particles has a plurality of coating layers on at least a portion of the surface thereof.

38. The electrode of claim 21, wherein said permanent magnetic particles have at least one coating layer on at least a portion of the surface thereof.

39. The electrode of claim 38, wherein said at least one coating layer comprises at least one of substituted polystyrene, unsubstituted polystyrene, and silane.

40. The electrode of claim 21, wherein said permenant magentic particles have a plurality of coating layers on at least a portion of the surface thereof.

41. The electrode of claim 21 or 22, further comprising an effective amount of at least one binder.

42. The electrode of claim 21 or 22, further comprising an effective amount of at least one gelling agent.

43. The electrode of claim 21 or 22, wherein each of said magnetizable particles comprises at least one ferromagnetic material selected from the group consisting of iron, nickel, cobalt, dysprosium, and gadolinium.

44. The electrode of claim 21, wherein said permanent magnetic particle comprises at least one material selected from the group consisting of samarium cobalt, neodynium-iron-boron, iron and iron oxide, cobalt, misch metal, and ceramic magnets comprising barium ferrite and/or strontium ferrite.

45. The electrode of claim 21, wherein said permanent magnetic particles have at least one coating layer on at least a portion of the surface thereof.

46. The electrode of claim 45, wherein said at least one coating layer comprises at least one of substituted polystyrene, unsubstituted polystyrene, and silane.

47. The electrode of claim 21, wherein said permanent magnetic particles have a plurality of coating layers on at least a portion of the surface thereof.

48. The electrode of claim 21, wherein said permanent magnetic particles have a diameter of about 0.1 microns to about 10 microns.

49. The electrode of claim 16, wherein said binder comprises at least one of polymers, starches, fatty acids, and liposomes.

50. The electrode of claim 17, wherein said gelling agent is selected from the group consisting of carboxymethycellulose, polyacrylic acid, and, sodium polyacrylate.

51. The electrode of claim 41, wherein said binder comprises at least one of polymers, starches, fatty acids, and liposomes.

52. The electrode of claim 42, wherein said gelling agent is selected from the group consisting of carboxymethycellulose, polyacrylic acid, and, sodium polyacrylate.

53. A composition of matter, comprising a plurality of magnetizable particles, wherein the magnetizable particles have been exposed to a magnetic field of sufficient strength to align the magnetic moments of a portion of atoms within the magnetizable particles sufficient to alter the distribution of products resulting from a chemical reaction

involving the magnetizable particles or occurring within the vicinity of the magnetizable particles.

54. A composition of matter comprising a plurality of magnetizable particles in a binder, wherein the magnetizable particles have been exposed to a magnetic field of sufficient strength to align the magnetic moments of a portion of atoms within the magnetizable particles sufficient to alter the distribution of products resulting from a chemical reaction involving the magnetizable particles or occurring within the vicinity of the magnetizable particles.

55. A composition of matter comprising a plurality of magnetic particles, wherein a portion of atoms within the magnetic particles have magnetic moments aligned sufficient to alter the distribution of products resulting from a chemical reaction involving the magnetic particles or occurring within the vicinity of the magnetic particles.

56. A composition of matter comprising a plurality of magnetic particles in a binder, wherein a portion of atoms within the magnetic particles have magnetic moments aligned sufficient to alter the distribution of products resulting from a chemical reaction involving the magnetic particles or occurring within the vicinity of the magnetic particles.